What is claimed is:

1. A transformer comprising:

a toroid-shaped core comprising magnetic material;

at least one primary coil of insulated wire wound around the core, the primary coil electrically isolated from a transformer load;

at least one secondary coil of insulated wire wound around the core; and

a printed circuit board (PCB), wherein the PCB includes a plurality of vias and bonding pads, the vias in communication with the bonding pads, and wherein wire ends of the at least one primary and at least one secondary coils are attached to the vias, the toroid-shaped core and coils affixed to the PCB such that a center axis of the toroid is substantially perpendicular to the PCB.

2. The transformer of claim 1, wherein the at least one primary coil comprises a plurality of windings electrically connected in parallel to each other.

3. The transformer of claim 2, wherein first ends of the plurality of windings are attached to a first via and second ends of the plurality of wires are attached to a second via.

4. The transformer of claim 3, wherein an electrical resistance of the primary coil is about 15 milliohms.

5. The transformer of claim 4, wherein the at least one secondary coil has a different number of windings than the at least one primary coil.

6. The transformer of claim 5, wherein the at least one secondary coil is a plurality of coils, wherein at least two of the plurality of coils have a different number of turns.

7. The transformer of claim 6, wherein the at least one primary coil comprises wire of 30 American wire gauge (AWG) and the at least one secondary wire comprises wire of 42 AWG.

8. The transformer of claim 6, wherein the transformer further includes a cover over the coils.

9. The transformer of claim 8, wherein the cover comprises an electrically conductive material.

10. The transformer of claim 9, wherein the cover is electrically connected so as to provide an electromagnetic shield to the transformer.

11. A method of forming a transformer comprising:

winding insulated wire around a magnetic core to form at least one secondary transformer coil;

winding insulated wire around the magnetic core to form at least one primary transformer coil, the primary coil electrically isolated from a transformer load;

attaching wire ends of the at least one primary coil to at least first and second vias of a printed circuit board (PCB), the vias being in communication with bonding pads on the PCB;

attaching wire ends of the at least one secondary coil to at least third and fourth vias of the PCB; and

attaching the wire ends of the primary and secondary coils flush to a surface of the vias on the PCB.

12. The method of claim 11, wherein attaching wire ends of the primary and secondary coils to vias of the PCB includes:

inserting the primary and secondary coil wire ends into vias;

soldering the wire ends of the primary and secondary coils to the vias; and

cutting the wire ends of the primary and secondary coils to length.

13. The method of claim 12, wherein the method further includes grinding the wire ends of the primary and secondary coils flush to the surface.

14. The method of claim 12, wherein soldering the wire ends of the primary and secondary coils includes melting insulation from the wire ends.

15. The method of claim 11, wherein forming at least one secondary coil includes forming a plurality of secondary coils, at least two of the secondary coils having a different number of turns.

16. The method of claim 11, wherein forming at least one primary coil includes forming a plurality of primary coils.

17. The method of claim 16, wherein forming a plurality of primary coils includes electrically connecting the primary coils in parallel.

18. The method of claim 11, further comprising affixing the coils and the magnetic core to a first side of the PCB with epoxy.

19. The method of claim 18, wherein the method further includes covering the coils and the magnetic core with an electromagnetic shield.

20. A method comprising:

attaching wire ends of at least one primary coil of a transformer to at least first and second vias of a printed circuit board (PCB), the vias being in communication with bonding pads on the PCB;

attaching wire ends of at least one secondary coil of a transformer to at least third and fourth vias of the PCB; and

attaching the wire ends of the primary and secondary coils flush to a surface of the vias on the PCB.

21. The method of claim 20, wherein attaching wire ends of the transformer primary and secondary coils to vias of the PCB includes:

inserting the primary and secondary coil wire ends into vias; and

soldering the wire ends of the primary and secondary coils to the vias.

22. The method of claim 21, the method further including trimming the wire ends of the primary and secondary coils.

23. A voltage generator for use in an implantable pulse generator comprising:

a power source, the power source having output terminals;

a transformer having a lead-less package, the transformer attached to a main circuit board of the pulse generator and the transformer having a primary and a secondary coil;

a switch connected in series with the primary coil between the positive and negative terminals of the power source, the switch receiving an input signal to open and close the switch;

a diode connected in series with the secondary coil across the terminals of a load, the load comprising a capacitive storage element connected to leads adaptable for connection to a heart;

a sense circuit monitoring the voltage at the load, the sense circuit having an output signal which is a first signal when the output voltage of the voltage generator is

below a selected threshold voltage and a second signal when the output voltage of the power supply is above or equal to the selected threshold voltage; and

a controller, receiving the output signal of the comparator and transmitting the input signal to the switch to open and close the switch, wherein the controller closes the switch to provide power to the load when receiving the second signal and opens the switch when receiving the first signal.

24. The voltage generator of claim 23, wherein the transformer lead-less package includes a printed circuit board.

25. The voltage generator of claim 24, wherein the packaged transformer is surface-mounted to the main circuit board in the pulse generator.

26. The voltage generator of claim 24, wherein the packaged transformer is wire bonded to the main circuit board in the pulse generator.

27. A method of using a transformer having a lead-less package in an implantable pulse generator, the method comprising:

providing a voltage generator circuit topology on a main circuit board of an implantable pulse generator, the topology including a transformer; and

surface mounting the transformer having a lead-less package, the lead-less package including a printed circuit board having vias, on the main circuit board of the pulse generator.

28. The method of claim 27, wherein surface mounting the transformer includes:

providing solder bumps on bonding pads of the printed circuit board of the packaged transformer; and

mounting the transformer onto the main circuit board by reflowing the solder bumps.

29. The method of claim 28, wherein providing solder bumps includes using solder to form the bumps that has a lower melting temperature than solder used to attach the transformer to the vias of the printed circuit board.

30. The method of claim 27, wherein surface mounting the transformer includes wire bonding the transformer to the main circuit board.